



ANNUAL REPORT
OF THE
TROPICAL FOREST EXPERIMENT STATION
1941

The end of the year finds us at war with the duty to orient our program so that the personnel, program, and work of the Station is directed to making the largest possible contribution to winning the war. We were not caught unawares as, in accordance with our promise at the beginning of the year to keep our plans and program tuned to current conditions, our work during the past year has turned more and more to activities which would contribute to the then "Defense Program."

The Station has been in a position to contribute materially to the program for hemisphere solidarity and has taken care of a great many requests for information, advice, seed, etc. Despite the very small staff one of our foresters was loaned to Haiti for a year to initiate a forest program in that country. The time of the Director has been taken up with many meetings in connection with the defense program and all our technical staff has given first priority to calls for assistance from the military forces, such as camouflage. Prompt attention has also been given to requests for assistance in testing the possibilities of local woods for products which are becoming short, such as boxes for crating vegetables, etc. Several little used species generally considered weeds were cut and boxes constructed. If machinery was available satisfactory crates and boxes could be constructed locally from two or three of these woods. Match blocks obtained from five species were sawn, dried and delivered to the match factory. One species proved satisfactory and if further supplies of Idaho white pine are not available, this substitute will be used. Some time was spent on a determination of what woods were available for emergency repairs to docks, buildings, etc. and one species is being tested for teredo resistance to be used as piling for emergency purposes as considerable quantities are available in required sizes.

We have tried to put first things first and at the same time continue the most important projects in our research program. Some projects have been pushed into the background to be carried out at a later more propitious time but no work necessary to continuity in our program has been dropped. The project status sheets attached give an overall picture of our research program together with progress and results so far, so that it is not necessary to repeat in this abbreviated report. However, these project sheets are by no means a measure of the work of the Station.

The Station while two years old is still in a formative stage with construction of a large headquarters office and laboratory building still under way. Delays in securing materials have retarded the work but the present outlook is that it will be completed this coming year. Grading and landscaping of the 5-acre grounds is well advanced. Funds have been secured for the construction of a hurricane proof garage through an E.R.A. project and ground has been broken. This structure will be completed early in the coming year. The Branch Station at El Verde has been furnished and put in first class shape as a work center. Similar work at the Rio Abajo Branch Station is well advanced.

Progress has been made in the accumulation of reference material for our library. The accumulation of working tools such as specimens for the Tropical Forest Herbarium, wood samples, forest insect collection, has progressed through the W.P.A. White Collar Project sponsored by the Station.

The growing correspondence and number of visitors to the Station require more and more of the time of the technical staff and is evidence of the progress made in establishing the Tropical Station as the center of information and research on tropical forestry in the Western Hemisphere.

The Caribbean Forester has been published regularly and the steady flow of articles indicates the regard in which this publication is held.

As to the future, our work will be constantly tuned to the war effort with all of the time left from such activities pointed towards the problems of the post-war period. As Chairman of the Regional Post-war Planning Committee, the Director while giving most of his time to such plans will, through intimate knowledge of the part forestry will play therein, be able to orient the research work of the Station so that it is equipped to meet the new emergencies which will arise with the coming of peace.

Even in such a brief report we wish to make acknowledgement of the help and assistance given by the Caribbean National Forest, and of the Work Projects Administration. To all those too numerous to mention who through contributing articles, sending us publications, seed, wood samples and letters of encouragement we owe a debt of thanks.

PERSONNEL

Overhead Administration:

Regular

Arthur Bevan
Ralph A. Shull
María Belén Capiel (EOD 7-1-41)

Director
Jr. Administrative Assistant
Assistant Clerk Stenographer

Temporary (W.P.A.)

Francisco León Alfaro
Carmen Snow Solá
Nydia Marrero
Amparo Rosario
Lilliam Bartolomei
Providencia Medina Mercado
Altagracia Guillén
Norberto Lugo Ramírez
Ernesto Goytia
José Asencio
José Ramón Colón Rodríguez
Miguel Angel Cases Torres

Multilith Operator
Chief Clerk
Library Assistant
Typist
Typist
Copy Reader
Typist
Laboratory Assistant
General Foreman
Project Superintendent
General Foreman
Driver

Forest Management:

Regular

Leslie R. Holdridge (Detailed to
Haiti, 9-15-41)
José Marrero
Luis E. Gregory (LWOP-Effective
6-15-41)
Ana Teresa Vega

Associate Forester
Principal Biological Aide

Assistant to Technician
Assistant Clerk Stenographer

Temporary (W.P.A.)

Alberto Girod Giol
Carmen Otero Vilá
Raúl Ortiz Lugo
Carmen de Cardí Roura
Carmen García Ruiz
Angeles Isern Noya

Area Project Supervisor
Herbarium Attendant
Artist
Statistical Clerk
Translator
Typist

DENDROLOGICAL STUDIES

The Problem

Importance: The first prerequisite for the practice of forestry is a knowledge of the forest and the trees which are its component parts. In the tropics of the Western Hemisphere where forest management is in its infancy, only the most fundamental of forestry principles applying elsewhere are of use, and even they cannot be intelligently applied without a knowledge of the trees which make up the forest. Forest research is dependent upon this same knowledge of tree species. Obviously, building up an herbarium and the preparation of a field manual describing the tree species are of first importance.

Findings to date: A study of existing literature showed that no works on forestry in Puerto Rico had been published, but a few good botanical works are available. From these sources it has been determined that there are about 600 native and exotic arborescent species in Puerto Rico and its neighboring small islands (Mona, Culebra, Vieques, and the U. S. Virgins). Gradually the herbarium has been increased in size and in addition drawings of the leaves, flowers and fruits of the trees are being made in preparation for a field manual.

Plans for the future: Plans for the project in the immediate future include the collection of herbarium specimens of all tree species found in Puerto Rico and nearby islands; and the completion of drawings and descriptions which will eventually be published in a volume titled "Trees of Puerto Rico". The descriptions and drawings are being multilithed and issued as soon as a group of 50 are completed in order to make the information available as soon as possible. In addition a more technical book is proposed, giving keys and complete botanical descriptions of all native and exotic trees of Puerto Rico. In the more distant future the scope of our dendrological work should be enlarged to include the other land areas within our sphere, all the countries of tropical America. Arrangements should be made for the collection of herbarium specimens by trained men in all of these countries. Undoubtedly a better knowledge of the tree species existing in the various countries would be of great stimulus to collaboration between countries whose forest problems may then be found related.

DENDROLOGICAL STUDIES

The Project

Field division: Forest management

Work project: Silviculture

Line project: Silvics - dendrological studies.

Purpose: (1) To preserve a collection of authenticated herbarium specimens of tropical woody plant species as a reference for the identification of unknowns brought in by Station or outside workers, and as a source of material for taxonomic and ecological studies; and (2) to prepare an illustrated field manual of the trees of Puerto Rico.

Review of past work: Collection for the herbarium began in 1938. At the end of 1940 more than 1,000 specimens were mounted and catalogued, including one species new to science. Pen and ink sketches of leaves, flowers and fruit of over 300 species, as well as 50 written descriptions, both in English and in Spanish, for the tree manual were completed.

Accomplishments in 1941: Collection in conjunction with field trips was continued by Gregory until he left in February, and by Holdridge until he left in September. More than 250 specimens were added to the herbarium. The second 50 written descriptions in English for the tree manual were completed. Nearly 50 additional sketches were made. Volume I of the tree manual, "Trees of Puerto Rico", including 50 species, is in the process of publication.

Plans for 1942: Continuation of collection of plant specimens incidental to other field work. (The extent of the work done on this phase of the project will depend upon the return of Gregory from sick leave). Continuation of sketching and description of additional species for future volumes of the tree manual. Publication of Volume II of "Trees of Puerto Rico" including the second 50 species, in both English and Spanish.

Date of completion: The herbarium is a continuing project. The tree manual will not be completed for several years.

Assignment: Holdridge and Gregory.

TREE DISTRIBUTION

The Problem

Importance: When confronted with a problem of reforestation, forest ecologists generally base their selection of the tree species to be used on a thorough study of the native or original tree growth if it is available. Unfortunately, in Puerto Rico the removal or modification of nearly all of the forest growth has left only scattered evidence to indicate the characteristics of the original stable forest. Therefore, to base the selection of species for future plantations on the best information available, it is very important that a study be made of relicts of the original forests, the present "second growth" stands, and uncut forests in similar environment in neighboring countries.

Findings to date: Field notes on the location of fragments of the original forests and the corresponding sites have made the construction of a very general original forest type map. A preliminary study of the mangrove was a logical beginning of the type studies, since this type contains the most extensive remnant of the original forest.

Plans for the future: In the immediate future it is planned to make detailed ecological descriptions of the three remaining original forest types, the mangrove, and the temperate montane rain forest, including the moist and the wet high mountain types. This information plus that obtained from similar studies of the uncut forests of neighboring islands such as Hispaniola will give information not only as to the optimum environment for the important native tree species, but also many of their silvicultural characteristics because of their position in the various forest associations. Some improvement in the original forest type map should be possible as more is learned about the silvicultural characteristics of the species.

TREE DISTRIBUTION

The Project

Field division: Forest management

Work project: Silviculture

Line project: Silvics - tree distribution

Purpose: To delimit, define, and study the various forest types in Puerto Rico to provide basic information.

Review of past work: Work on the ecology of forest types was started in 1938 with a study of the mangrove type. A preliminary forest type map of the island was made from field notes taken over an extended period.

Accomplishments during 1941: Field observations were continued incidental to other work. The description of forest types was postponed as personnel was not available.

Plans for 1942: Completion of a description of the mangrove type and possibly also the ausubo-tabonuco-motillo association (wet mountain).

Date of completion: Indefinite

Assignment: Wadsworth, Marrero, and Girod.

SEED STUDIES

The Problem

Importance: For the most efficient production of nursery stock for the large planting program on deforested lands, it is imperative that studies of collection, weight, germination, and storage be made for the seed of all species proposed for planting. As yet, satisfactory methods of seed storage are known for only a few species. Therefore, some species must be sown almost immediately, with the result that all the nursery stock is ready for lifting at one time, making correlation of nursery and planting schedules difficult.

Findings to date: A seed storage study showed that the viability of Swietenia macrophylla and Cedrela mexicana seed may be maintained up to 8 months by storage at temperatures between 2° and 5° C. West Indian locust (Hymenaea Courbaril) seed is viable for 1 year when stored at ordinary temperatures and for 2 years in cold storage. A study of the storage of maga, (Montezuma speciosissima) seed which has no endosperm and at ordinary temperatures will keep for only a few days showed that seeds stored at 33° to 40° F and at 62.5 per cent moisture content will maintain satisfactory viability for a period of 59 days. The findings of this experiment have made successful airmail shipments of seed of this endemic species possible.

Records collected on flowering and fruiting dates of tropical tree species will serve as a basis for seed collection.

Plans for the future: As new species are proposed for trial in plantations it will be the duty of research to determine the best ways of collecting and handling seed. Work on this problem will therefore be continuous. One important goal is the preparation of a seed manual containing methods of storage, germination and other information relative to the seed of tropical tree species.

SEED STUDIES

The Project

Field division: Forest management

Work project: Regeneration

Line project: Seed studies

Purpose: To develop satisfactory methods of collecting, handling, and storing seed to meet nursery and direct seeding requirements.

Review of past work: A study of the storage of mahogany, (Swietenia macrophylla); Spanish cedar, (Cedrela mexicana); and maga, (Montezuma speciosissima) seed was made to determine the effect of low temperatures on viability after different periods. Seeds of tortugo, (Sideroxylon foetidissimum) were scarified mechanically and with acid to determine the effect upon germination. Records of flowering and fruiting dates were begun.

Accomplishments during 1941: The results of the seed storage study of maga, (Montezuma speciosissima) were analyzed. The study of better methods of testing germination, the recording of flowering and fruiting dates, and the development of criteria for judging seed maturity were not carried out.

Plans for 1942: Germination tests and the determination of the number of seeds per pound of some of the more important species. A study of the storage of pomarroza, (Jambosa jambos) and roble, (Tabebuia pallida) seed. Other phases of this project not carried on in 1941 will proceed when Gregory returns from sick leave.

Date of completion: Indefinite

Assignment: Marrero and Gregory.

NURSERY PRACTICE

The Problem

Importance: The success of the large scale forest planting program on deforested lands in Puerto Rico depends not only upon planting technique and the choice of species, but also on the production of vigorous planting stock in the nursery. Healthy stock is particularly necessary because of severe weed competition on most of the sites. Techniques should be developed for solving nursery problems related to the species now being planted and other species which will appear desirable for trial in future plantings.

Findings to date: The findings of a depth and type of cover study of 10 species are not available as yet. A preliminary study of seedling growth in the nursery indicated that sowing has frequently been too dense.

Plans for the future: Future work on this problem should be in collaboration with the Caribbean National Forest and should include determination of the best nursery techniques in growing stock of species of value for forest plantings in tropical American forests. The findings should be compiled by species and published in a nursery manual.

NURSERY PRACTICE

The Project

Field division: Forest management

Work project: Regeneration

Line project: Nursery practice

Purpose: To develop satisfactory methods for the economical production of desirable planting stock.

Review of past work: A depth and type of cover study was carried out with 10 species. A preliminary study of density of sowing in the nursery has been made.

Accomplishments during 1941: The study of the proper sowing densities for nursery stock and the trial of rooting Magnolia splendens with Hormodin powders were not made. With the loan of Holdridge to Haiti the revision of the Nursery Manual was postponed.

Plans for 1942: Study of proper density of seedlings of some of the more important species in nursery beds. Publication of the results of the depth and type of cover study in "The Caribbean Forester".

Date of completion: Indefinite

Assignment: Marrero and Wadsworth.

PLANTING

The Problem

Importance: Since the establishment of the Caribbean National Forest, and particularly since the inception of the CCC program, large forest plantations have been established in Puerto Rico. Planting may continue for some time to be the most extensive forestry work project.

Research is vital to the development of efficient and inexpensive forest regeneration. In addition to species now planted it is anticipated that new, possibly more satisfactory species will continually be appearing, with corresponding problems. Eventually planting should be done on a much smaller scale. It is probable that eventually there will be found some species which will furnish the products needed by the people and readily reproduce themselves.

Findings to date: Studies to date have been restricted to the species currently being planted. A study of mahogany stock grades showed that oversize stock (4 to 6 feet tall) should be cut back to 4 inches before planting. The study of the effect of lapse of time between lifting and planting maga showed that nursery stock stored in a moist, darkened room for 10 days gave the highest 10-month survival: 0 days, 30%; 3 days, 70%; 6 days, 80%; 10 days, 96%; and after 14 days, 82%. Still more significant, stock held from 0 to 4 days showed no height growth after 10 months while stock 10 days out of the nursery grew an average of 10 inches.

A study of the effect of soils on plantations in the Luquillo Unit showed that the differences in the physical soil properties are of much greater importance than chemical properties. A continuous forest cover is of prime importance in the maintenance of the clay soils at higher elevations. The soils at lower elevations are of more open texture and are suited to the rotation of agricultural and forest crops. A survey of the parcelero plantations in the Toro Negro Unit concluded that on high moist sites with degraded soils, aggressive pre-climax charcoal species should be planted rather than high-value climax species, as the former are better able to compete with weeds.

Plans for the future: Work on this problem should develop practical planting methods for all tree species which seem likely to have a place in managed tropical forests of the Western Hemisphere. Results of the lapse of time study were so phenomenal that the experiment will be repeated with maga and four other species. An experiment aimed at the establishment of quick growing aggressive species on worn-out degraded sites will be the next step in this project. Pomarrosa and roble will be the first two species tested.

PLANTING

The Project

Field division: Forest management

Work project: Regeneration

Line project: Planting

Purpose: To improve existing techniques or develop new, satisfactory methods for attaining successful regeneration by (1) determination of the most suitable species, type of stock or seed, and method of regeneration to be used on the various sites, and (2) determination of practical ways of controlling weed competition during the critical period of establishment.

Review of past work: In 1938 a study was made of broadleaved mahogany nursery stock grades. Studies were also made of planting hole size and the effect of delayed planting after the hole is made. A preliminary study of the effects of holding Montezuma speciosissima stock for various periods of time between lifting and planting was made. Surveys of plantations throughout the island were initiated to determine the present status and the effect of site on establishment and growth.

Accomplishments during 1941: The elapsed time study of Montezuma speciosissima was analyzed.

Plans for 1942: A study of growth and survival of five species held different periods of time between lifting and planting. A study of growth and survival of pomarrosa, (Jambosa jambos); and roble, (Tabebuia pallida) when broadcast sown, spot seeded, and planted with nursery stock and wildings on different sites with different types of ground preparation. Determination of the most suitable size of nursery stock of pomarrosa and roble for planting.

Date of completion: Indefinite

Assignment: Marrero and Wadsworth.

STAND STUDIES

The Problem

Importance: The knowledge of growth, yield, and mortality of forest stands is a prerequisite to inventory and management. Little is known about the growth of trees in the American tropics because of the impossibility of using growth rings as a reliable indicator of past growth, and because all studies are very recent. Likewise, the volume of a small sample is meaningless because of the heterogeneity of most tropical forests. In addition, most of the stable forest associations in Puerto Rico have been entirely removed or converted into unstable ones so that in most forest types past findings will apply only in a limited way in the future. The problem, is complex, but very important for intelligent forest management.

Findings to date: The mangrove is a relatively stable forest type, and for that reason it was the first chosen for study. The plots are so new that no definite results are available as yet. The pomarrosa type, though considered to be temporary may become an important one because of its apparent rapid growth and vigorous sprouting ability. A plot established in a pomarrosa stand is too new to give results.

Plans for the future: In the immediate future, plots should be established in the small remaining nearly virgin stands in the mountains to give an indication of the capacity of the sites. In addition, the growth should be studied in second growth forests to determine the relative growth of the various species as a guide to which one should be favored. Eventually the growth of different forests in other tropical American countries should be determined to permit the introduction of new rapid growing species, if such exist, for greater production of agricultural and fuel needs in Puerto Rico. The ultimate aim of studies of growth, yield and mortality will be to permit intelligent sustained yield forest management.

STAND STUDIES

The Project

Field division: Forest management

Work project: Mensuration

Line project: Stand studies

Purpose: To determine growth, yield, and mortality in tropical American hardwood forests.

Review of past work: In 1939 five plots were established in young mangrove stands in the San Juan Mangrove District of the Insular Forest in cooperation with the Insular Forest Service. In 1940 the trees were retagged and diameters measured.

Accomplishments during 1941: A small growth and yield plot was established in a young coppice stand of pomarrosa, (Jambosa jambos). Diameters of all trees and the heights of 200 were measured.

Plans for 1942: Establishment of growth and yield plots in roble and abandoned coffee-shade stands.

Date of completion: Indefinite

Assignment: Wadsworth, Marrero, and Girod.

STAND IMPROVEMENT

The Problem

Importance: In the tropics little or nothing is known of the effect of stand improvement on volume and value increment and our only knowledge to date would indicate that in complex tropical forests the disturbance of natural associations may have far reaching and often serious effects. There are six general types of forest growth in Puerto Rico, and ultimately the effect of different types of stand improvement must be determined if these stands are to be placed under scientific management. The results of such research would have wide application in the Western Hemisphere. For the immediate future knowledge of methods of stand improvement are needed in the following stands:

1. Mangrove forests. Cutting leads to very dense coppice. Sapling stands should be thinned if maximum increment is to be obtained.
2. Forest plantations. Recently established under the CCC program, they consist of species of value for their fine wood. Thinning and pruning techniques should be worked out for the production of rapid growing forests of high quality.
3. Second growth. In the more advanced stands the trees of highest potential value are in the understory. Liberation cuttings are needed to release them. Immature stands usually need weeding to relieve them from vines.
4. The mountain forests. Stand improvement in these forests, culled in the past, should attempt to increase the representation of the more valuable species.
5. The sierra palm forests are valuable only for watershed protection. It is desirable where possible to convert portions of them to forests which will be of value for their products as well as influences.

These problems are closely related to similar ones throughout tropical America.

Findings to date: So far, the most pressing problem is that of the plantations, which have entailed a large investment. Studies in the mangrove type are as yet inconclusive. In some of the second growth stands, liberation cuttings and weeding have been made with good results. Removal of vines from a brush field has materially improved tree form. Sierra palm conversion has been tried by clear-cutting and shelterwood, the latter having been the most satisfactory because it prevented excessive invasion by vines and weeds.

Plans for the future: The most pressing problem in the immediate future will continue to be that of the large plantations which will soon need thinning. It is hoped that the weeding, thinning and pruning of plantations can eventually be very largely eliminated through judicious choice of species, spacing, and sites. The improvement of second growth and the mangrove forests also appears desirable. Comprehensive work in these and the mountain and sierra palm types will be left to the future.

STAND IMPROVEMENT

The Project

Field division: Forest management

Work project: Silviculture

Line project: Stand improvement

Purpose: To develop methods for increasing volume and value increment in natural and artificially regenerated stands by pruning, thinning, or other cultural treatment.

Review of past work: Instructions on the technique were given to the crews doing stand improvement work in the Caribbean National Forest.

Accomplishments during 1941: The proposed study to determine the best methods of thinning plantations of maría, (Calophyllum antillanum), was postponed when a survey showed that the area in plantations ready for thinning was too small to furnish an adequate basis for a conclusive study.

Plans for 1942: Continued observation of plantations and forest stands subjected to stand improvement in order to more fully determine the effects and to permit a more intelligent and possibly a more comprehensive study at a future date when adequate areas and personnel are available.

Date of completion: Indefinite

Assignment: Wadsworth and Marrero.

PROPERTIES OF TROPICAL WOODS

The Problem

Importance: Little is known of the physical and mechanical properties of tropical woods of the Western Hemisphere, except for some of obvious high value for appearance (mahogany), for their workability (Spanish cedar), or for their hardness (lignum vitae).

The determination of the physical and mechanical properties of tropical American woods will provide a basis for the determination of:

- (a) The relative value of the woods of tropical species, a primary factor in forest management.
- (b) Correct strength functions and working stresses.

Judicious selection of the species to be favored in existing stands or to be used in plantations, the size to which trees are grown (and therefore the rotation), and the advisability of pruning are all dependent upon the value of the wood.

Findings to date: Work on this problem has just been started and as yet no results are available.

Plans for the future: Arrangements with wood research laboratories should be continued in an effort to eventually get complete descriptions of all the physical and mechanical properties of tropical American woods. The species of greatest present commercial importance will be tested first.

It may eventually be possible to prepare a key to the identification of tropical woods for publication with their properties and uses.

PROPERTIES OF TROPICAL WOODS

The Project

Field division: Forest products

Work project: Strength of wood

Line project: Properties of tropical woods. A cooperative project with the School of Forestry, Duke University.

Purpose: To determine the physical and mechanical properties of the commercially more important tropical woods.

Review of past work: Arrangements were made with Duke University in 1940 for a series of mechanical tests on tropical woods to be shipped by the Station.

Accomplishments in 1941: Samples of tabonuco, (Dacryodes excelsa), and motillo, (Sloanea Berteriana) were sent to Duke University from Puerto Rico. Samples of pino, (Pinus occidentalis) were sent from Haiti. Samples of motillo were placed in San Juan harbor to test their resistance to teredos.

Plans for 1942: Collection and shipment of samples of the wood of tostado, (Homalium racemosum) and one other species to Duke University for testing.

Date of completion: Indefinite

Assignment: Bevan and Girod, in cooperation with Professor Harrar, School of Forestry, Duke University.

THE PARCELERO SYSTEM

The Problem

Importance: In an Island with a population density of 554 persons per square mile and about one half acre of arable land per person the economy of land use must be based on the maximum utilization of every acre to support life. The Parcelero System is a combination of the production of subsistence food and forest crops on lands which will be submarginal if forest growth is permanently removed. It is an outgrowth of the very widespread practice of shifting (conuco) farming, and holds promise of a much more permanent livelihood for the hill people (jibaros). The system visualizes a permanent homestead with the growing of subsistence food crops and the main income of the families to be earned from the forest in which they are located. The importance of this system will grow in the post-war period, and the study under way will provide a working basis for more detailed studies to follow.

Findings to date: With the completion of the collection of field data and its analysis a preliminary draft of a report has been finished. While the final report has been delayed and only preliminary conclusions based on the data have been drawn, it is apparent that variability in soils, climate, local conditions such as distance from a road, type of crop, and similar factors that no uniform policies can be applied and that even within a given unit sufficient variation of conditions exists to require that each individual unit should be examined and treated as an entity. In addition to farm privileges such as food crops, dwelling, etc. there is a clear indication that provision must be made for a minimum annual cash income of \$150 from the forest on outside employment.

Plans for the future: The completion in final form of this preliminary report and, with this as a basis, further studies to determine the policies which should govern the operation of the Parcelero System on all lands within forest areas which are capable of supporting a family.

THE PARCELERO SYSTEM

The Project

Field division: Forest economics

Work project: New public domain

Line project: The parcelero system. A cooperative project with the Insular Agricultural Experiment Station, Puerto Rico Reconstruction Administration, and Insular Forest Service.

Purpose: A preliminary socio-economic study of the parcelero system of settlement on public forest lands mainly to determine the financial and economic status of the settler, the most economic size of parcel, and other factors affecting the social and economic welfare of these settlers.

Review of past work: Work has commenced in August 1940. Data on 436 parcelero families (approximately 50% sample) were collected in the field. Only those established on the land for more than one year and allotted a parcel of 3 acres or more in extent were considered. Field work was completed in December 1940.

Accomplishments during 1941: The data were analyzed and a preliminary report was prepared.

Plans for 1942: The report will be reviewed and put into final form for publication.

Date of completion: 1942

Assignment: Bevan, in cooperation with Descartes (Insular Agricultural Experiment Station).